



# CLEARING THE AIR

## An APCD Workshop Series

- July 16**    **APCD 101/Louisville's Air Quality**
- July 30**    **Air Quality & Health/Reducing My Pollution Impact**
- Aug. 13**    **Odors: Reporting and Responding**
- Aug. 27**    **The APCD Regulatory Process**
- Sept. 10**    **How We Monitor Air Quality**
- Sept. 22**    **Understanding Risk: A Technical Workshop\***  
                    **(How to use EJ Screen, TRI, and other EPA data tools)**
- Sept. 24**    **The STAR Program/Environmental Justice**

**QUESTIONS?**  
Call us at  
**(502) 574-6000**

Workshops held at the Louisville Free Public Library, 301 York St.  
Each session is 5:30-7 p.m.

*(\*Technical Workshop 10 a.m.-2 p.m. Registration Required. Send email to [ClearingTheAir@louisvilleky.gov](mailto:ClearingTheAir@louisvilleky.gov))*

**[www.louisvilleky.gov/APCD](http://www.louisvilleky.gov/APCD)**



# CLEARING THE AIR

## An APCD Workshop Series

### The APCD Workshop Series seeks to:

- Increase the community's understanding of Louisville's air quality and of APCD's many functions
- Provide information that will **empower** citizens
- Provide a more informal forum for Q&A with APCD and opportunity for feedback
- Improve related public outcomes



# CLEARING THE AIR

## An APCD Workshop Series

### Today's workshop seeks to:

1. Help the community better understand how APCD uses equipment, federal laws, and local regulations to monitor air quality.
2. Provide data and resources to the public that better explain Louisville's complex air shed.



# CLEARING THE AIR

## An APCD Workshop Series

- There are no silly questions

- Public Participation =



- Interactive

- Ask questions throughout the workshop as they come to mind
- Use the Post-it notes to write down questions and place them around the room

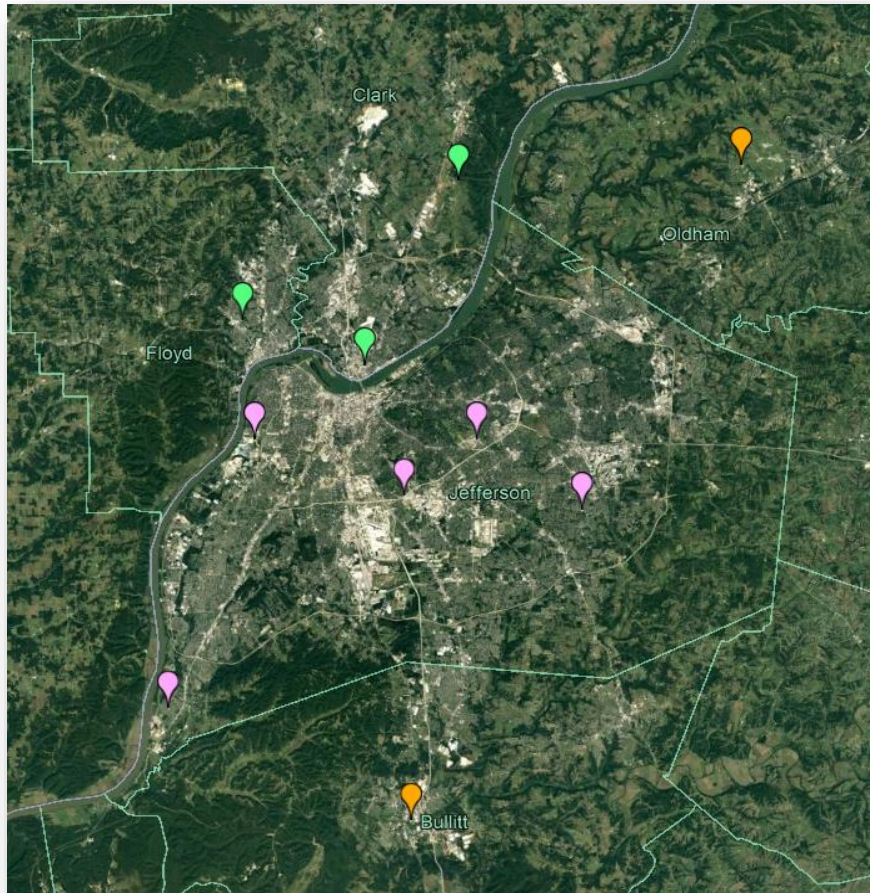


# How We Monitor Air Quality

Air Pollution Control District  
September 10, 2018



# Louisville MSA Network



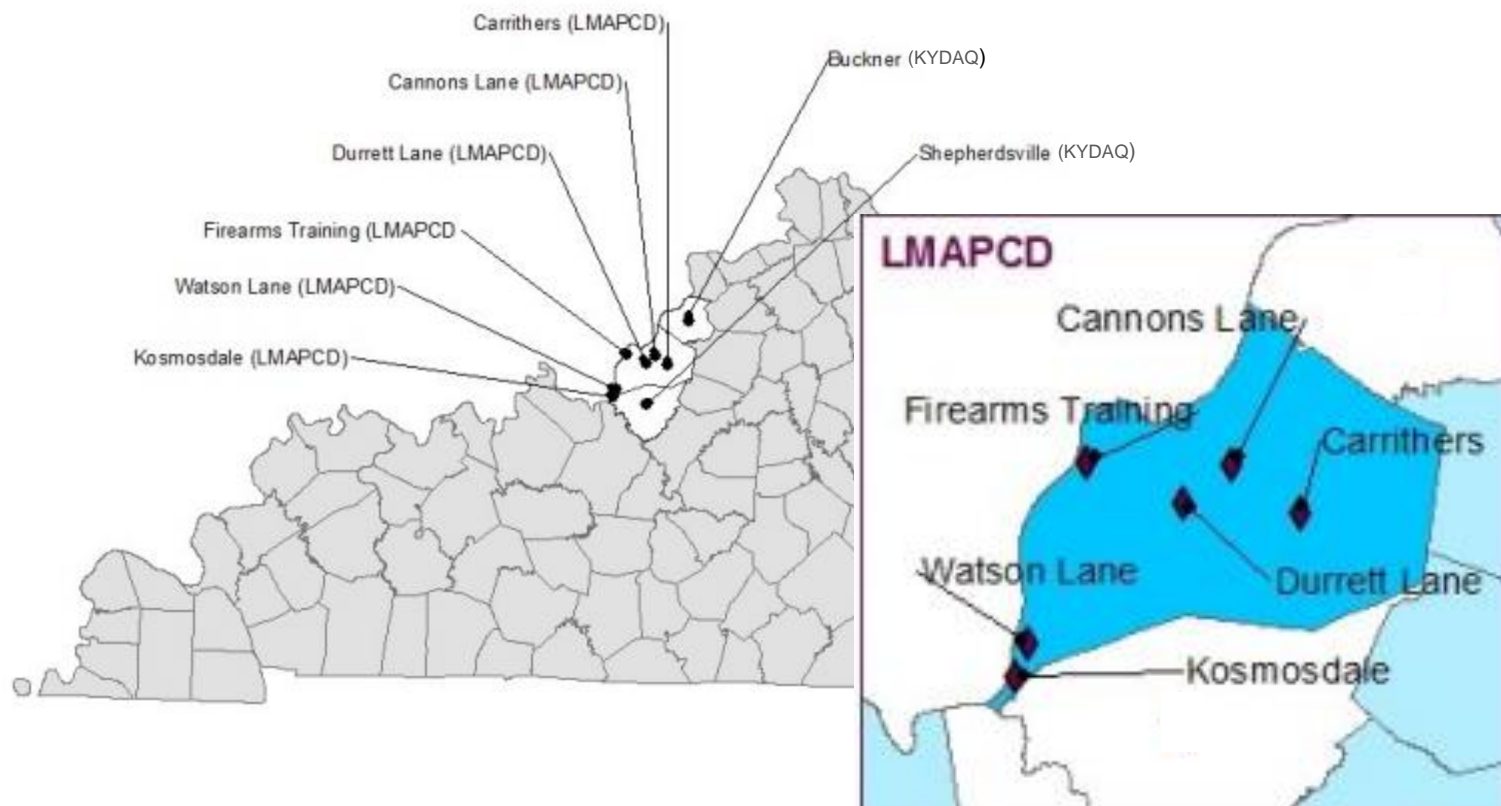
## Air quality monitor operators:

- Louisville Metro Air Pollution Control District (**pink** markers)
- Kentucky Division for Air Quality (**orange** markers)
- Indiana Department of Environmental Management (**green** markers)

**\*Louisville/Jefferson County, KY-IN MSA and population density within the MSA. Source: Kentucky State Data Center. Jefferson County, KY is the most populous county within the MSA.**

# Monitoring for Jefferson County, KY

## Louisville/Jefferson County, KY-IN





# Why do we monitor?

- 40 CFR 58.2:
  - Support SIPs, national air quality assessments, and policy decisions
  - Judge compliance with and/or progress made towards ambient air quality standards
  - Activate emergency control procedures that prevent or alleviate air pollution episodes; develop long-term control strategies





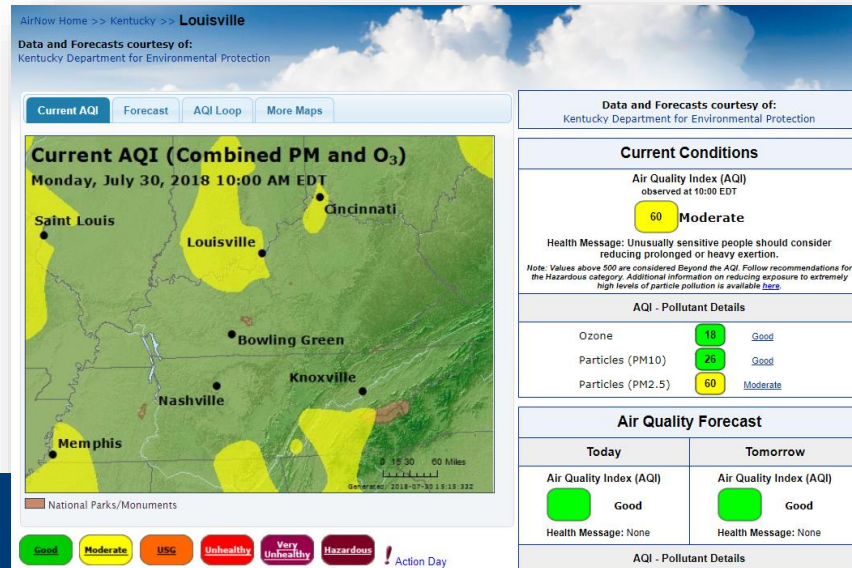
# Why do we monitor?

- To provide air pollution data for the general public (AQI)
- Observe pollution trends throughout the region, including non-urban areas
- To offer a database for research and evaluation of effects
- Protect human health and welfare
- To improve the overall quality of the air we breathe



# Air Quality Index

- The AQI is generally based on monitored values for:
  - Ozone
  - Particle pollution
- AQI value of 100 generally corresponds to the National Ambient Air Quality Standards (NAAQS).
- **AQI values at or below 100 are generally thought of as satisfactory.**



# A Guide to the AQI

AQI Values	Actions to Protect Your Health From Ozone
Good (0 - 50)	None
Moderate (51 - 100*)	Unusually sensitive people should consider reducing prolonged or heavy outdoor exertion.
Unhealthy for Sensitive Groups (101 - 150)	The following groups should reduce prolonged or heavy outdoor exertion: <ul style="list-style-type: none"><li>- People with lung disease, such as asthma</li><li>- Children and older adults</li><li>- People who are active outdoors</li></ul>
Unhealthy (151 - 200)	The following groups should avoid prolonged or heavy outdoor exertion: <ul style="list-style-type: none"><li>- People with lung disease, such as asthma</li><li>- Children and older adults</li><li>- People who are active outdoors</li></ul> Everyone else should limit prolonged outdoor exertion.
Very Unhealthy (201 - 300)	The following groups should avoid all outdoor exertion: <ul style="list-style-type: none"><li>- People with lung disease, such as asthma</li><li>- Children and older adults</li><li>- People who are active outdoors</li></ul> Everyone else should limit outdoor exertion.

# What do we monitor?

- 40 CFR part 50 of the Clean Air Act (CAA) requires EPA to set the NAAQS
- NAAQS are:
  - Health-based standards
  - Set by EPA to address **six principal pollutants**, which are called “**criteria**” air pollutants



# Criteria Pollutants

**Carbon Monoxide (CO) – Fatigue/Headaches**

**Lead (Pb) – Neurological Effects**

**Sulfur Dioxide (SO<sub>2</sub>) – Wheezing**

**Nitrogen Dioxide (NO<sub>2</sub>) – Irritates Airways**

**Particulate Matter (PM<sub>2.5</sub>, PM<sub>10</sub>) – Aggravates Asthma**

**Ozone (O<sub>3</sub>) – Irritates Respiratory System**

# NAAQS

Pollutant [links to historical tables of NAAQS reviews]		Primary/ Secondary	Averaging Time	Level	Form
<a href="#">Carbon Monoxide (CO)</a>	primary		8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
<a href="#">Lead (Pb)</a>	primary and secondary		Rolling 3 month average	0.15 µg/m <sup>3</sup> <a href="#">(1)</a>	Not to be exceeded
<a href="#">Nitrogen Dioxide (NO<sub>2</sub>)</a>	primary		1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	primary and secondary		1 year	53 ppb <a href="#">(2)</a>	Annual Mean
<a href="#">Ozone (O<sub>3</sub>)</a>	primary and secondary		8 hours	0.070 ppm <a href="#">(3)</a>	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
<a href="#">Particle Pollution (PM)</a>	PM <sub>2.5</sub>	primary	1 year	12.0 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m <sup>3</sup>	98th percentile, averaged over 3 years
	PM <sub>10</sub>	primary and secondary	24 hours	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
<a href="#">Sulfur Dioxide (SO<sub>2</sub>)</a>	primary		1 hour	75 ppb <a href="#">(4)</a>	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	secondary		3 hours	0.5 ppm	Not to be exceeded more than once per year

# Current NAAQS Status

Pollutant	Standard	Averaging Time	Attainment Status
Carbon Monoxide	9 ppm	8-hour	Attainment
	35 ppm	1-hour	Attainment
Lead	0.15 $\mu\text{g}/\text{m}^3$	Rolling 3-month Average	Attainment
Nitrogen Dioxide	53 ppb	Annual Average	Attainment
	100 ppb	1-hour	Attainment
Particulate Matter (PM10)	150 $\mu\text{g}/\text{m}^3$	24-hour	Attainment
Particulate Matter (PM2.5)	12.0 $\mu\text{g}/\text{m}^3$	Annual Average	Unclassifiable <sup>1</sup>
	35 $\mu\text{g}/\text{m}^3$	24-hour	Attainment
Ozone	0.070 ppm	8-hour	Nonattainment <sup>2</sup>
Sulfur Dioxide	75 ppb	1-hour	Partial County Nonattainment

1 – EPA proposed redesignation to attainment May 30, 2018. 83 FR 24714.

2 – Final designation published June 4, 2018, effective Aug. 3, 2018. 83 FR 25776.



# What else do we monitor?

- APCD also operates supporting meteorological equipment, special purpose, and research monitors



# How do we monitor?

- 40 CFR Part 50 – Technical requirements for the specific Federal Reference Methodologies (FRM) defined in appendices
- 40 CFR Part 58 – Ambient Air Quality Surveillance
  - Annual Network Plan
  - Technical QA/QC requirements
  - Operating Schedules
  - Data Certification
  - Data Submittal
  - Network Design
  - Probe and Monitoring Path Siting Criteria

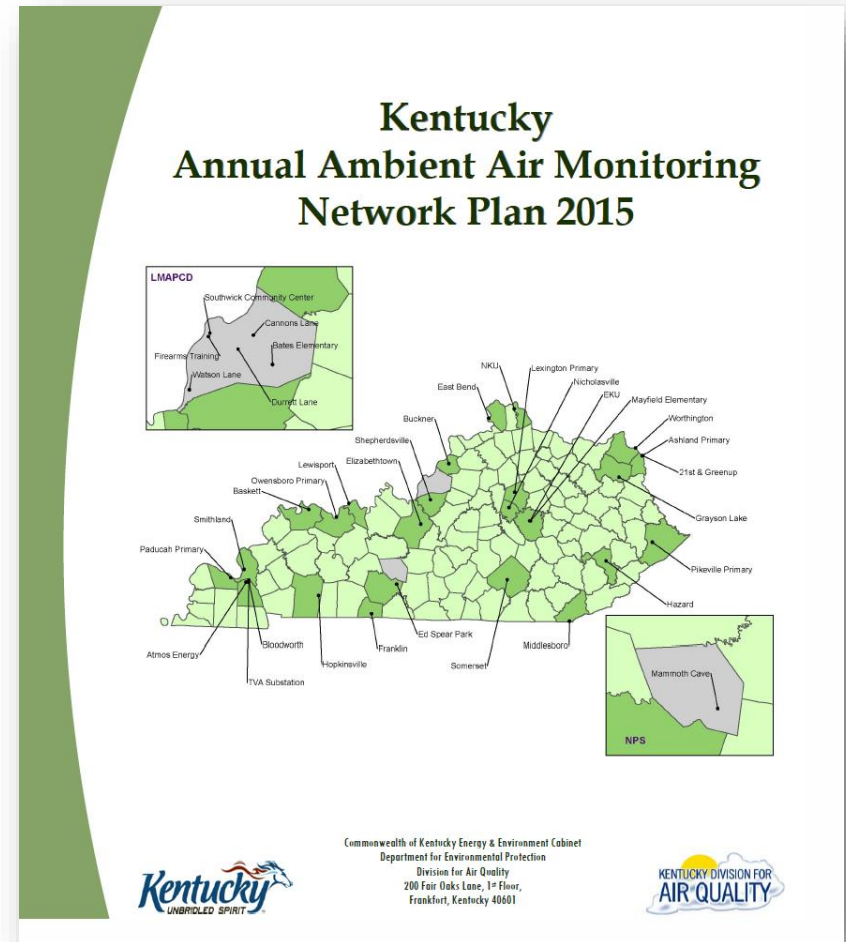
# Monitoring – Ozone Method

- Federal reference method (FRM)
  - Based on gas-phase chemiluminescence (*e.g.* glowstick)
- Federal equivalent method (FEM)
  - Based on strong absorption band of ozone at a specific region in the ultraviolet spectrum



# Annual Network Plan


- Submitted to the EPA annually
- Establishes and maintains an air quality surveillance system
- Includes a statement of purposes for each monitor
- Provides evidence that the site and operation of each monitor meets all applicable federal requirements



# Network Plan

- Example – Siting Requirements
  - Horizontal and vertical placement
  - Spacing from sources, obstructions, trees, and roadways
  - Interference on monitoring path
  - Probe material

CSA/MSA: Louisville/Jefferson County-Elizabethtown-Madison, KY-IN CSA: Louisville/Jefferson County, KY-IN MSA  
 401 KAR 50:020 Air Quality Region: Louisville Interstate (078)  
 Site Name: Southwick Community Center  
 AQS Site ID: 21-111-0043  
 Location: 3621 Southern Avenue, Louisville, KY 40211  
 County: Jefferson  
 GPS Coordinates: 38.23319, -85.81566 (NAD 83)  
 Date Established: July 1, 1983  
 Inspection Date: December 17, 2014  
 Inspection By: Jennifer F. Miller  
 Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



The monitoring site is located on the roof of the Southwick Community Center in Louisville, Kentucky. The sample inlets are 6 meters above ground level and 45 meters from the nearest road. Upon inspection, the sample inlets and monitors were found to be in good condition. The air monitoring site meets the criteria established in 40 CFR Part 58, Appendices A, C, D, E and G.

**Monitoring Objective:**  
 The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide pollution levels for daily index reporting.

**Monitors:**

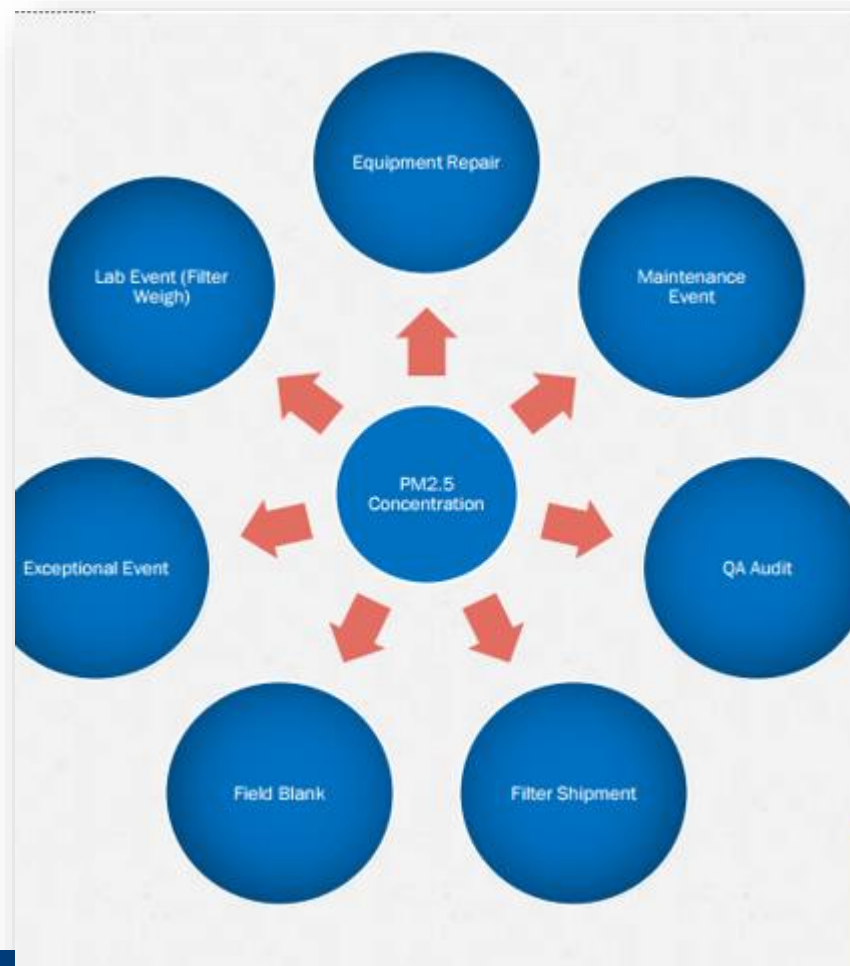
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
PM <sub>10</sub> BAM	5.9	SLAMS AQI	Automated Equivalent Method utilizing Beta Attenuation.	Continuously
FRM PM <sub>2.5</sub>	6.0	SLAMS	Gravimetric	24-hours every third day
Collocated FRM PM <sub>2.5</sub>	6.0	SLAMS	Gravimetric	24-hours every sixth day
PM <sub>2.5</sub> BAM	6.0	SLAMS AQI	Automated Equivalent Method utilizing Beta Attenuation.	Continuously
Meteorological	11.4	Other	AQM grade instruments for wind speed, wind direction, humidity, barometric pressure, and temperature	Continuously
-Rain Gauge	5.0	Other	AQM grade instrument for precipitation	Continuously

# Quality Assurance/Quality Control Requirements

- APCD performs a series of management activities – including planning, implementation, and assessment – necessary to provide quality data
  - APCD's air monitoring section collects more than **1.5 million data points per month** and each point is evaluated by staff (does not include intermittent sampling)

# What influences monitoring data?

- Did the air monitoring equipment need repair?
- Were there any exceptional events (*e.g.* smoke from wildfires in California, fireworks, etc.) that impacted the data?
- Was the data checked for quality assurance?





# Data Review

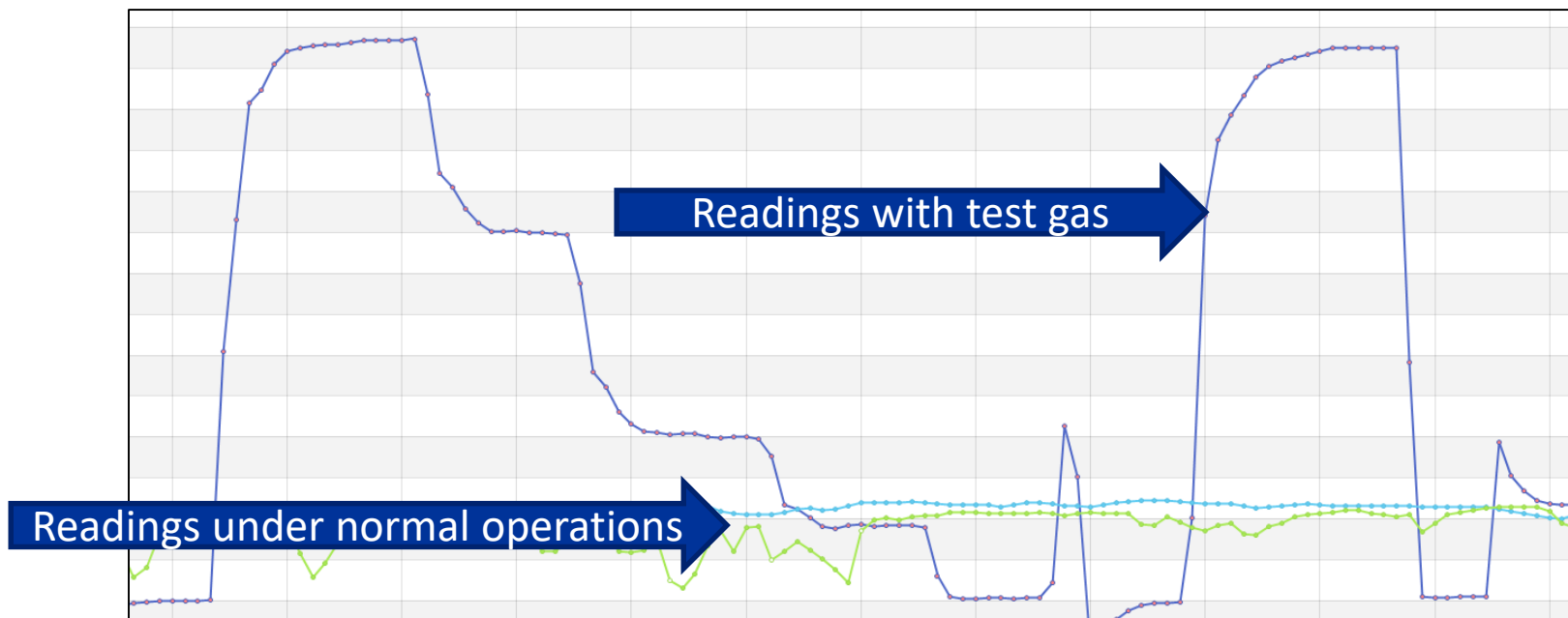
- Example: Routine Ambient Data Analysis



\*24 hours of 1-minute resolution data from three ozone analyzers.

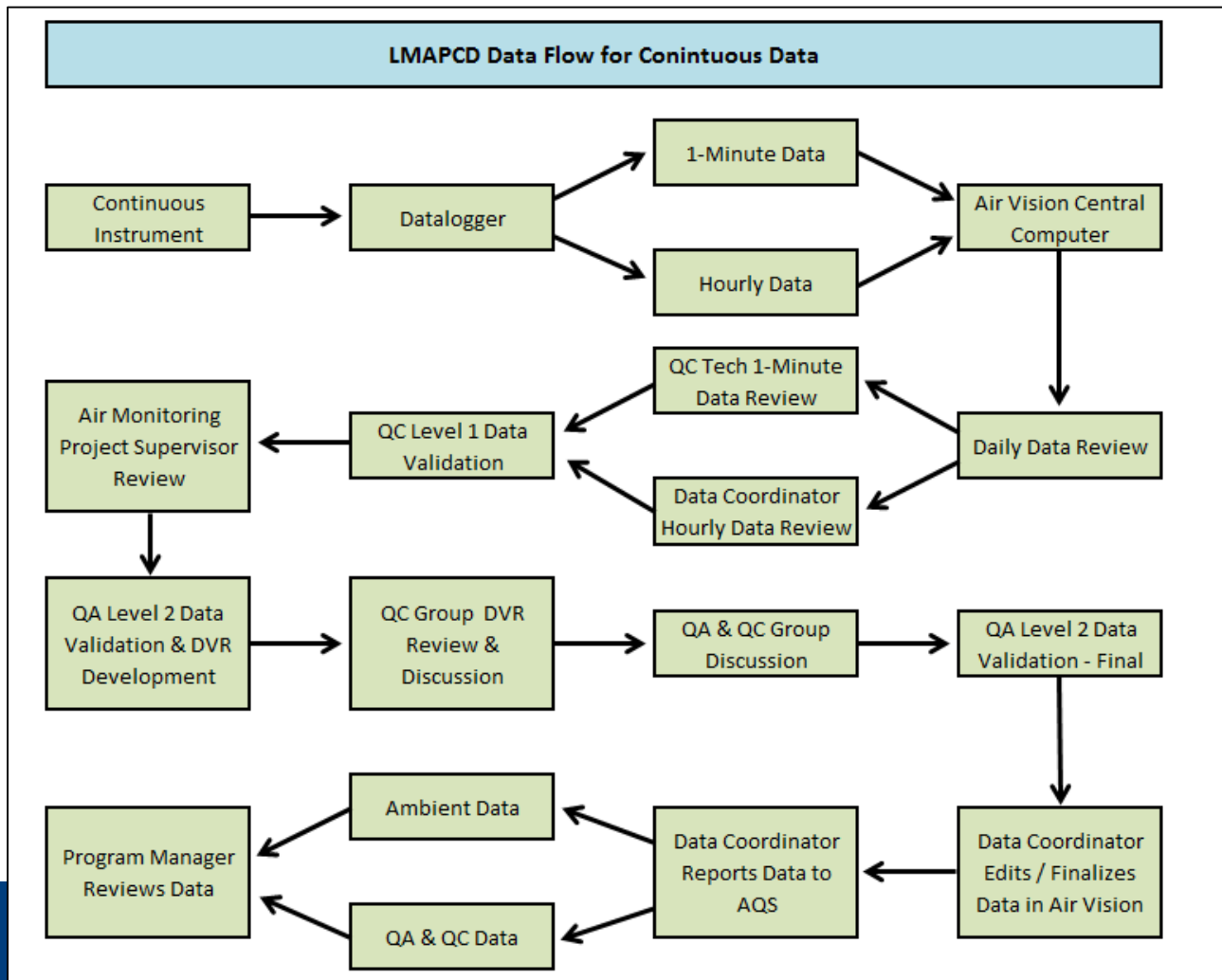
# Data Review

- Example: Routine Quality Control Check



\*Method used to verify accuracy of an ozone monitor.

# Quality Assurance/Quality Control Requirements



# Quality Assurance Elements

- Quality Managements Plans, Quality Assurance Project Plans, Standard Operating Procedures
- Certification of Standards
  - Photometers
  - Calibrators
  - Flow devices
- Performance Evaluations
- Internal System Audits
- External System Audits
- Data Audits



# Data Certification

- Agency shall submit to EPA a letter to certify data collected meet all Quality Assurance (QA) criteria
- Certify that all previous year's data is accurate and complete
- APCD re-evaluates yearly dataset, based on statistics, summaries, and QA data

# Data Certification

## Data Evaluation and Concurrence Report for Particulate Matter

**Certifying Year:**2015

**Certifying Agency:**Jefferson County, KY Air Pollution Control District (0549)

**Parameter:** PM2.5 - Local Conditions (88101)

**PQAO Name:** Jefferson County, KY Air Pollution Control District (0549)

**Quality Assurance Project Plan Approval Date:** 05/17/2011

### Collocation Summary

Method	# Sites	# Sites Reg	# Sites Collocated	% Collocated	CV Est	CV UB	Criteria Met?
118	4	1	1	100	4.37	5.00	Y

### PEP Summary

# Methods	# Audited Methods	# PEP Required	# PEP Submitted	% Complete	Bias	Criteria Met?
1	1	5	2	40	-7.09	Y

### Monitors Summaries

Routine Data (ug/m3)									Flow Rate Audit		Collocation			PEP	Concurrence Flag				
AQS Site ID	POC	Method	Monitor Type	Mean	Min	Max	Exceed. Count	Outlier Count	% Complete	Flow Rate Audit		CV	% Complete	PQAO Crit. Met	PEP PQAO Crit. Met	QAPP Appr.	AQS Rec Flag	CA Rec Flag	EPA Concur
										Bias	% Complete								
21-111-0043	1	118	SLAMS	9.65	2.3	50.2		0	100	-0.33	100	5.00	100	Y	Y	Y	Y	Y	Y
EPA Comment: Cert rec'd 02/03/16. Complete. dpalmer																			
21-111-0043	2	118	SLAMS	10.47	2.5	49.7		0	98	-0.43	100			Y	Y	Y	Y	Y	Y
EPA Comment: Cert rec'd 02/03/16. Complete. dpalmer																			
21-111-0043	3	170	SLAMS	10.95	-6.2	410.0		0	85	+0.30	100			Y	Y	Y	Y	Y	Y
EPA Comment: Cert rec'd 02/03/16. Complete. dpalmer																			
21-111-0051	1	118	SLAMS	9.36	2.2	36.2		0	100	-0.32	100			Y	Y	Y	Y	Y	Y
EPA Comment: Cert rec'd 02/03/16. Complete. dpalmer																			
21-111-0051	3	170	SLAMS	11.19	-3.0	400.3		0	91	+0.00	100			Y	Y	Y	Y	Y	Y
EPA Comment: Cert rec'd 02/03/16. Complete. dpalmer																			
21-111-0067	1	118	SLAMS	8.60	1.8	25.1		0	98	+0.11	100			Y	Y	Y	Y	Y	Y
EPA Comment: Cert rec'd 02/03/16. Complete. dpalmer																			
21-111-0067	3	170	SLAMS	9.76	-4.4	88.2		0	97	-0.00	100			Y	Y	Y	Y	Y	Y
EPA Comment: Cert rec'd 02/03/16. Complete. dpalmer																			
21-111-0075	1	118	SLAMS	9.96	2.7	26.0		0	98	+0.47	100			Y	Y	Y	Y	Y	Y
EPA Comment: Cert rec'd 02/03/16. Complete. dpalmer																			

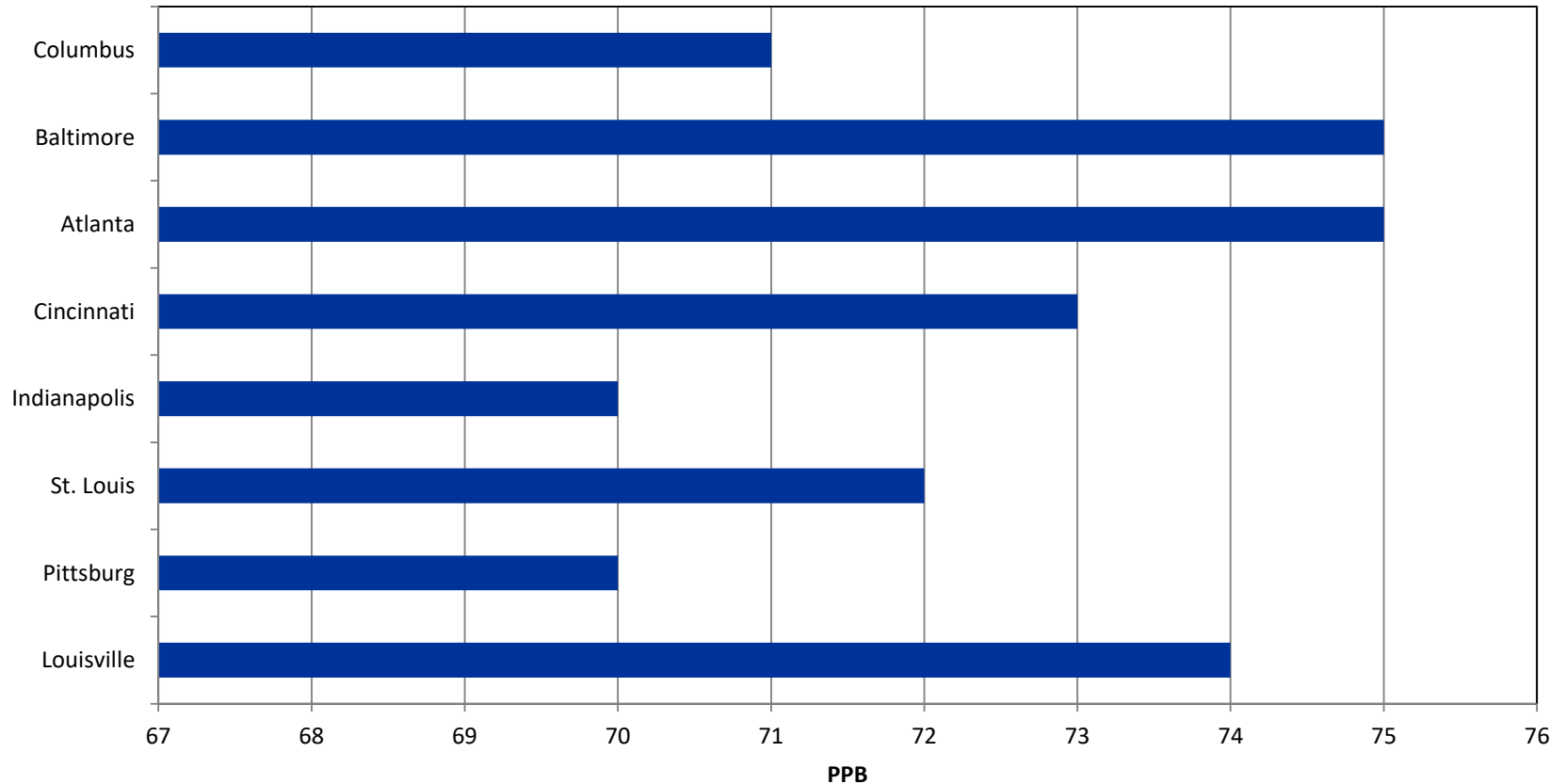
# Design Values

- Design values are the metrics (statistics) that are compared to the NAAQS to determine compliance. Each pollutant has a unique design value calculation.
- An attainment / non-attainment designation is based on **3 years of complete data**
- One year of calculations above the design value does not constitute non-attainment.



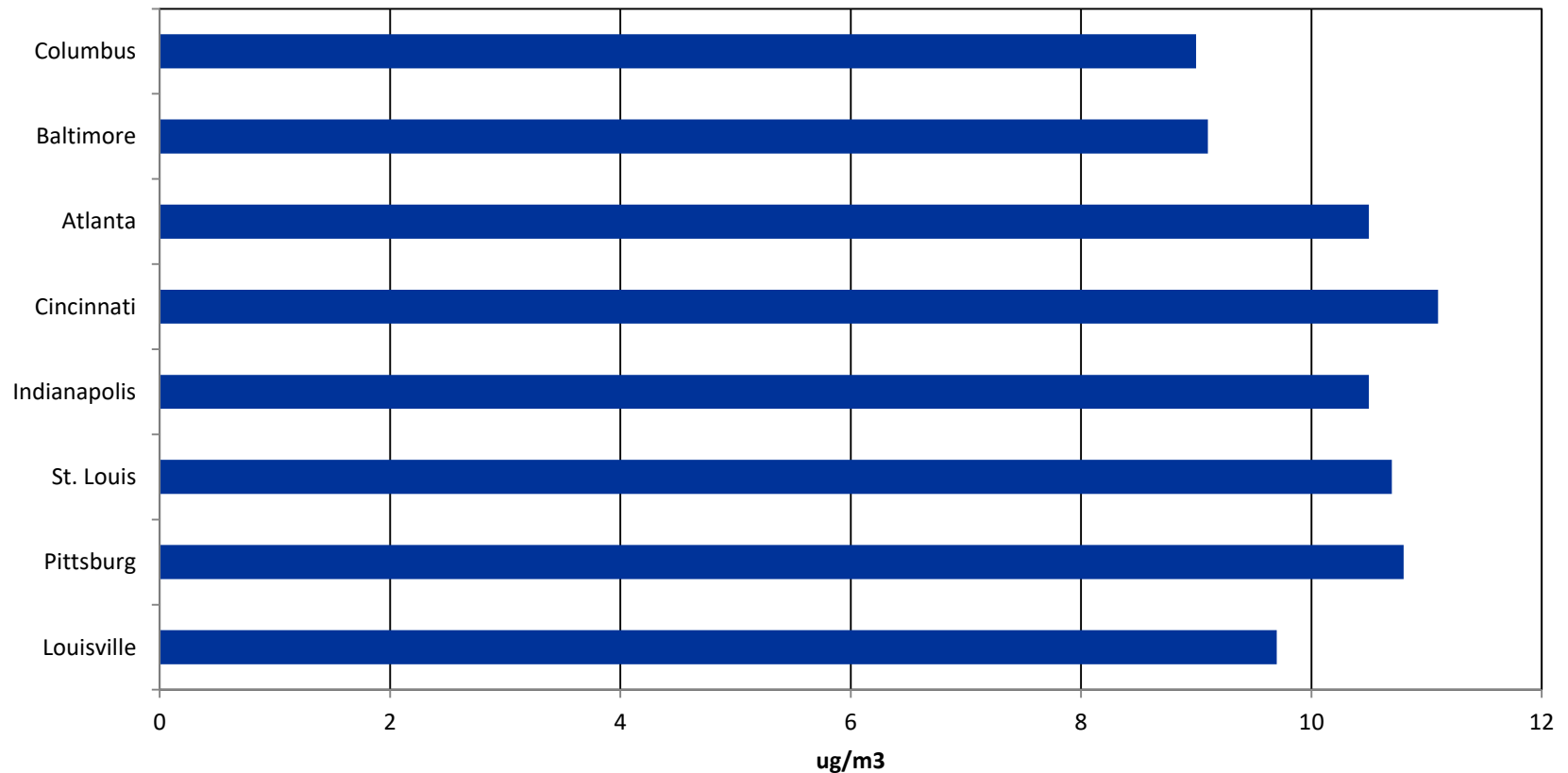
# Design Values

## Ozone 8 hr Design Values 2015-2017



# Design Values

## PM2.5 Annual Design Values 2015-2017



# Network Assessment

- Assessment of the air quality surveillance system **every 5 years** to determine:
  - If the network meets the monitoring objectives
  - If new sites are needed
  - If existing sites are no longer needed, and
  - Where new technologies are appropriate for incorporation in the ambient air monitoring network

# Network Assessment

- Items considered
  - Does the network support proper air quality characterization for areas with high populations of susceptible individuals?
  - Does adding or subtracting sites effect data users?
  - Are there changes needed based on population?

# Assessment Considerations

- Where Pollution Originates

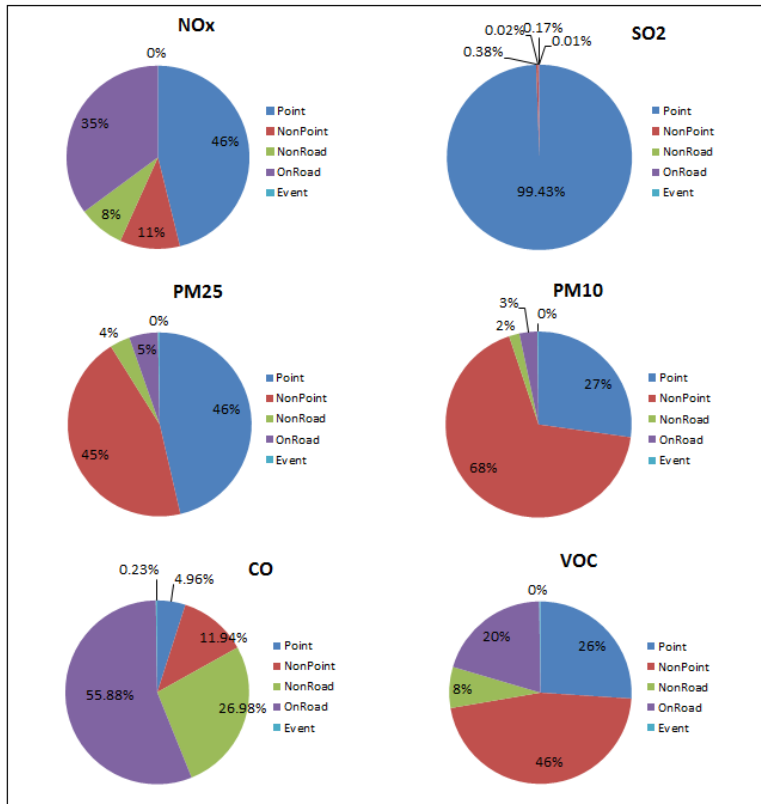
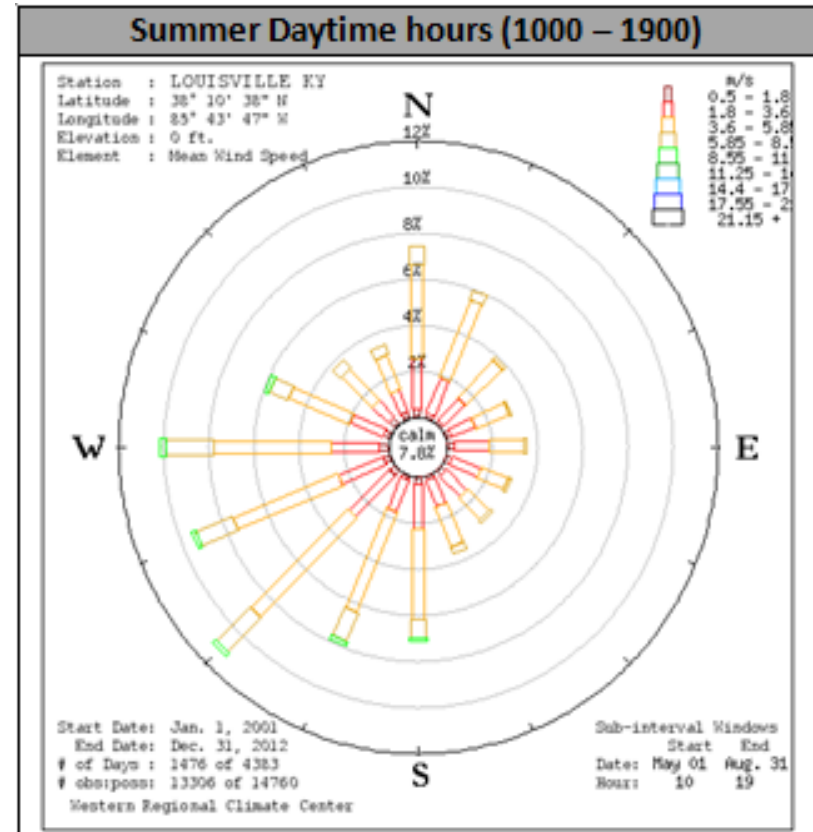


Figure 10 – Louisville Metro 2011 emission source category break down (percent of total emissions) for six criteria pollutants.

- Where Pollution Travels



# Network Assessment - Ozone

## 6.1 Ozone Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.1 contains specific design criteria for an ozone monitoring network. Table D-2 in that section contains the criteria for the minimum number of sites that are to be established. Minimum monitoring requirements for ozone apply to Metropolitan Statistical Areas (MSA). Based on 2014 census data, the population for the MSA is estimated to be 1,269,738. Based on this population estimate, the Louisville MSA is required to have one or two ozone monitors, dependent on the design value. As can be seen in Figure 14, the Louisville MSA contains seven ozone monitoring sites, three of those being operated within Louisville Metro by the LMAPCD. The number of ozone monitors within the MSA far exceeds the minimum monitoring requirements for ozone.

MSA Population	Most Recent 3-yr DV $\geq$ 85% of any O3 NAAQS	Most Recent 3-yr DV $<$ 85% of any O3 NAAQS
>10 million	4	2
4-10 million	3	1
350,000 – 4 million	2	1
50,000 – 350,000	1	0

Table 6 - EPA ozone monitoring requirements as found in 40 CFR Part 58 Appendix D, Table D-2.

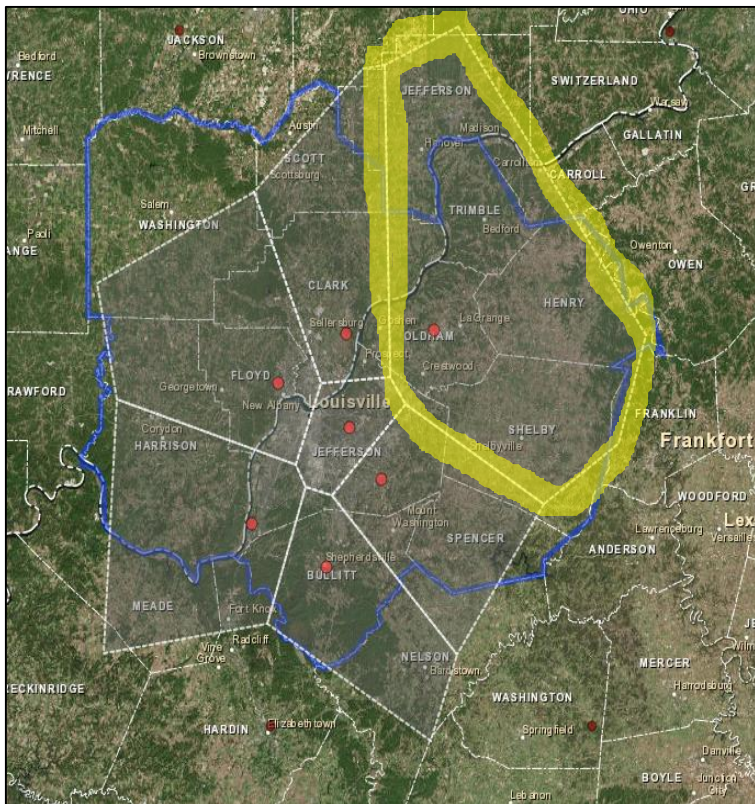
AQS Site ID	Site Name	Agency	Established	Monitor Objective	Monitor Scale
21-111-0027	Bates	LMAPCD	1/4/1973	Population Exposure	Urban
21-111-0051	Watson Lane	LMAPCD	7/16/1992	Population Exposure	Neighborhood
21-111-0067	Cannons Lane	LMAPCD	1/1/2010	Population Exposure	Neighborhood
21-185-0004	Buckner	KyDAQ	5/1/1981	Maximum Concentration	Urban
21-029-0006	Shepherdsville	KyDAQ	1/30/1992	Population Exposure	Urban
18-043-1004	Green Valley Elementary	IDEM	1/1/1977	Population Exposure & Maximum Concentration	Neighborhood
18-019-0008	Charlestown State Park	IDEM	5/1/2007	Population Exposure & Maximum Concentration	Urban

Table 7 - Ozone monitoring sites and relevant metadata for ozone monitors located within the Louisville/Jefferson County, KY-IN MSA

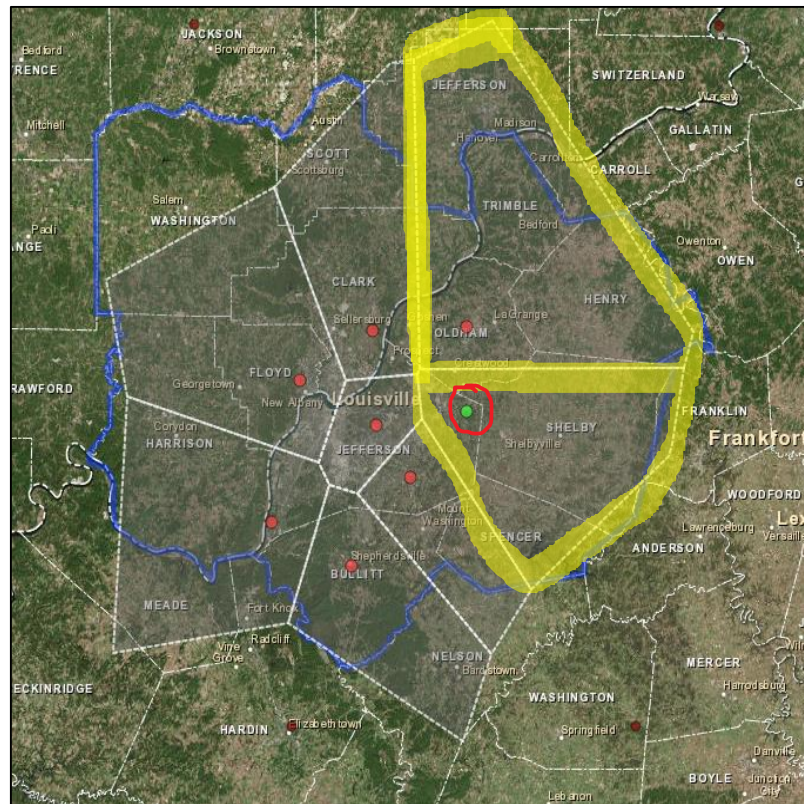


# Network Assessment - Ozone

- Modeling: Current air monitoring sites



- Modeling: Potential future air monitoring sites





# Network Assessment - Ozone

- What we determined
  - Current monitoring network exceeds EPA minimum requirements
  - Ozone concentrations and changes in our population may give reason for APCD to evaluate Louisville's current air monitoring networks
- Possible Future Projects
  - Adding air monitors in areas with growing populations (*e.g.*, east Jefferson County)
  - Removal or re-evaluation of current air monitors

# Air Toxics / PAMS Monitoring

- In addition to Criteria pollutant monitoring, APCD recently began monitoring for Volatile Organic Compounds (VOCs)
- Objectives
  - Characterize ambient VOC concentrations in the vicinity of Rubbertown community
  - Evaluate photochemically reactive compounds in support of ozone reduction efforts (Photochemical Assessment Monitoring Station – PAMS)

# Air Toxics / PAMS Monitoring

## ■ Traditional Method

- Manual collection using canisters
- Samples typically collected once every 6 or 12 days
- Samples shipped to lab for analysis
- Samples represents 24-hr period



## ■ Modern Method

- Automated Gas Chromatography
  - Two Auto GCs – Dual FIDs
- Samples collected every hour
- Samples analyzed in near real time
- Raw data available within the hour
- While temporal resolution is improved, additional challenges exist



# Air Toxics / PAMS Monitoring

**Fall 2017**

Auto GC installed  
(Firearms training site)

**Spring 2018**

Training/  
instrument  
evaluation  
period

**Fall 2018**

Manufacturer  
modifications  
to Auto GC

**Summer  
2019**

Install 2<sup>nd</sup>  
Auto GC at  
Cannons  
Ln. site  
(funding  
dependent)

**Winter  
2017/2018**

Hired  
Chemist

**Summer  
2018**

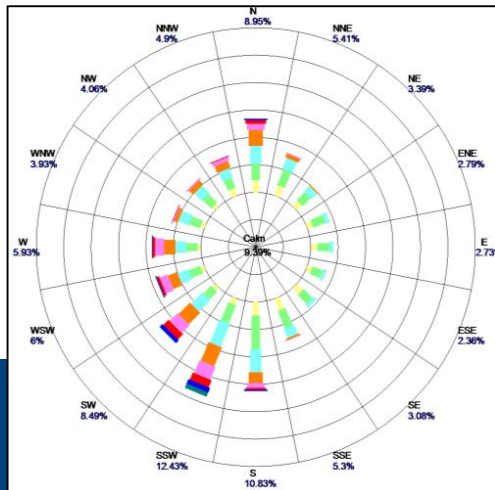
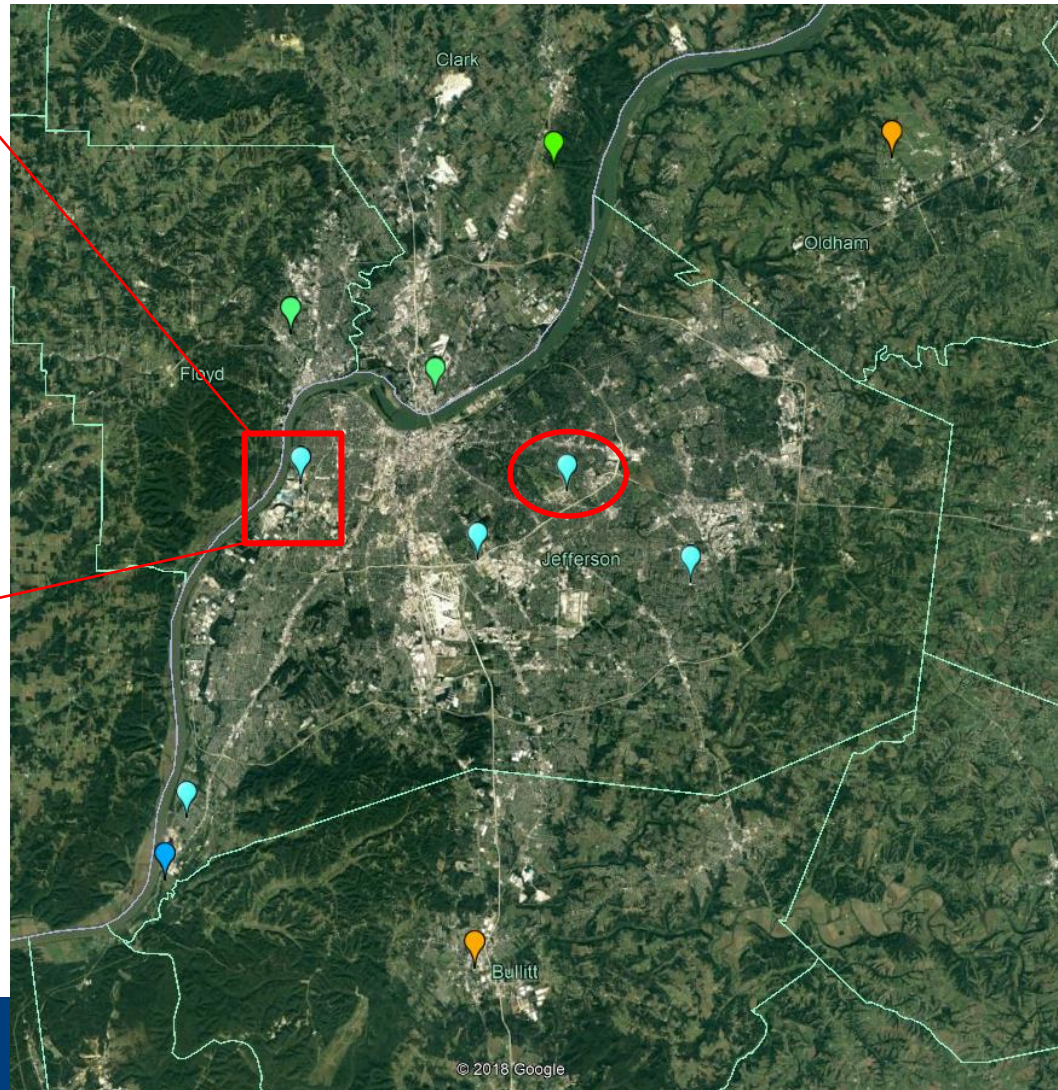
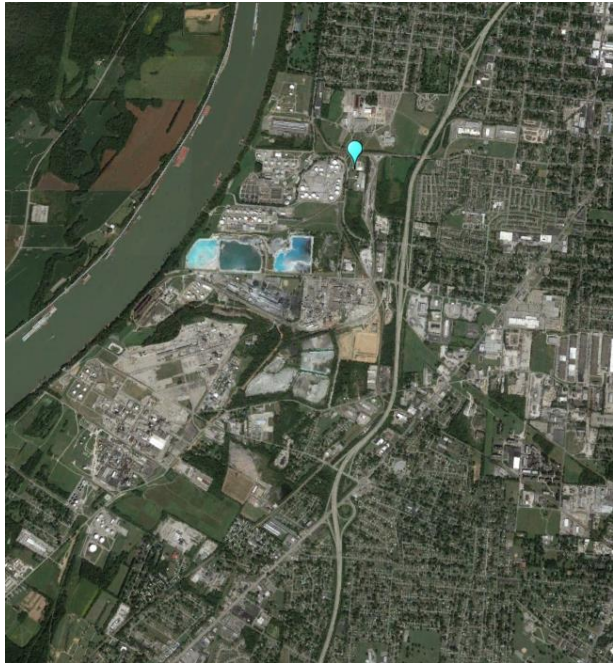
Trouble  
shooting,  
method  
refinement  
& develop  
QAPP

**Winter  
2018/2019**

Acquisition of  
QC standards;  
implement  
modified  
measurement  
system

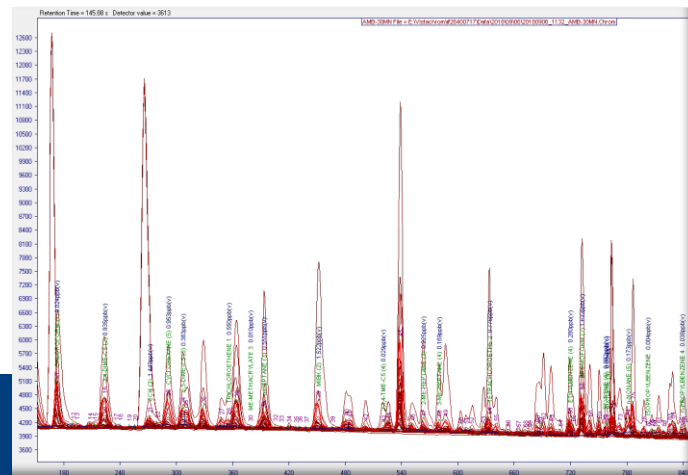


# Air Toxics / PAMS Monitoring



# Air Toxics / PAMS Monitoring

- Auto GC technology is complex and produces large amounts of data
- APCD is the 2<sup>nd</sup> AQ agency in the country to operate Chromatotec Auto GC
- Continuous refinement of methodologies expected
- APCD staff have worked extensively with manufacturer and participated in national workgroup calls to improve/refine method



# Air Toxics / PAMS Monitoring

- Next Steps
  - Continue development of Quality Assurance Project Plan (QAPP) and Standard Operating Procedures (SOPs)
  - Continue to work with Auto GC manufacturer to identify potential improvements in the system
  - Work with Data Management Software vendor to finalize new tool for validating & managing large amount of data
  - Acquire VOC standards for routine quality control checks
  - Make data available to the public



# Instrumentation

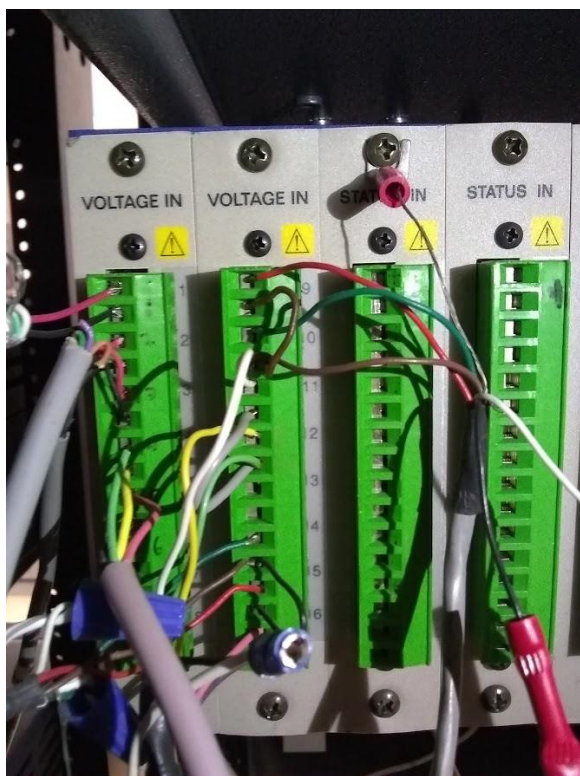
- The air monitoring team uses FRM and FEM air pollution analyzers, which have been approved by the EPA for regulatory use.





# Data Collection

- Collecting data requires knowledge of chemistry, meteorology, electronics, pneumatics, and more.



# Equipment Repair

- Staff operate and repair instruments in all conditions.



# New Technology

- APCD is deploying the next generation in continuous particulate monitoring.



# How can you monitor the air?

The screenshot shows the EPA's 'Air Sensor Toolbox for Citizen Scientists, Researchers and Developers'. The header includes the EPA logo and navigation links for Environmental Topics, Laws & Regulations, and About EPA. A search bar is present. The main content area features a large image of a 'DIY Village Green air monitoring system' with a person standing next to it. A sidebar on the right has a 'What's New' section with a link to a new manual and training video. Below the main image, there is a section titled 'How to Use Air Sensors' and another titled 'What Do My Sensor Readings Mean?'. The footer contains a brief description of the website's purpose.

**EPA** United States Environmental Protection Agency

Environmental Topics Laws & Regulations About EPA Search EPA.gov

## Air Sensor Toolbox for Citizen Scientists, Researchers and Developers

CONTACT US SHARE

### DIY Village Green air monitoring system

- New manual and training video now available

#### AIR SENSOR TOOLBOX

1 2 3 4

This website provides information for citizen scientists and others on how to select and use low-cost, portable air sensor technology and understand results from monitoring activities. The information can help the public learn more about air quality in their communities.

### How to Use Air Sensors

### What Do My Sensor Readings Mean?

<https://www.epa.gov/air-sensor-toolbox>

The screenshot shows the 'South Coast Air Quality Management District AQ-SPEC Air Quality Sensor Performance Evaluation Center'. The header includes the South Coast AQMD logo and social media links. A sidebar on the left lists navigation options: Home, Conference 2017, Sensors, Evaluations, Research Projects, Resources, Workshops, Sensor News, About Us, Contact AQ-SPEC, FAQs, Advisory Board, and About SCAQMD. The main content area features a 'Sensor List' section with a description of the AQ-SPEC program and a list of sensors. The sensors are displayed in a grid with images and names: ZB Technologies - POM, Acrobatic - Smart Citizen Kit, and Aeroqual - S500 (OZU 0-0.15). There are also partial views of other sensors below.

**South Coast AQMD**

## AQ-SPEC

Air Quality Sensor Performance Evaluation Center

### Sensor List

The AQ-SPEC program has acquired a number of commercially available "low-cost" air quality sensors. Please click on the image for information on a specific sensor as provided by the manufacturer.

Filter For 39 products

1 2 Next

**ZB Technologies - POM**

**Acrobatic - Smart Citizen Kit**

**Aeroqual - S500 (OZU 0-0.15)**

<http://yourstory.aqmd.gov/aq-spec/sensors/>



# Sensor use considerations

- Sensors are not as accurate as FEM/FRM analyzers, and data are not legally defensible for regulatory use.



ARISense used by Green Heart Project.



EPA S-Pod.

# Resources

## **Air Pollution Control District**

[Louisvilleky.gov/APCD](http://Louisvilleky.gov/APCD)

## **Louisville Air Watch**

[Airqualitymap.louisvilleky.gov](http://Airqualitymap.louisvilleky.gov)

## **Kentucky Division for Air Quality**

[Air.ky.gov/Pages/DivisionReports.aspx](http://Air.ky.gov/Pages/DivisionReports.aspx)

## **Federal Regulations**

[Code of Federal Regulations \(CFR\)](#)

# Questions?

## Louisville Metro Air Pollution Control District

701 W. Ormsby Ave.

Ste. 303

Louisville, Ky. 40203

(502) 574-6000

[www.louisvilleky.gov/APCD](http://www.louisvilleky.gov/APCD)

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